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ABSTRACT

The Occupational Information Access System (OIAS) improves the accessibility of occupational labor market information for career planning. Its operation at Churchill High School is evaluated from several angels: the likes and dislikes of users; the effect of OIAS on users' knowledge of occupational information and on their career plans; why other students did not use it; its use in instruction; administrative considerations; its costs; and reactions of parents. Half the student body used it, mostly without assistance; repeat usage was common. Afterward, 84 percent said they were satisfied or very satisfied. Being "personally interested in looking for occupational information" was the most frequently given reason for use. The predominant reason why others did not use OIAS was a lack of knowledge of its availability. Most students used both the QUEST Questionnaire and the occupational Descriptions, which they described as "fun to use," "easy to understand," and "accurate and up-to-date." OIAS helped students plan careers, and talk with their parents about their career futures. Parents had a good understanding of the System and strongly approved of its use. Direct operating costs total about $2 per student user. (Author/SC)

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Occupational Information Access System

EVALUATION OF THE OCCUPATIONAL INFORMATION ACCESS SYSTEM AS USED AT CHURCHILL HIGH SCHOOL

A Project Report

by
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I. INTRODUCTION

The Occupational Information Access System is a means of improving the accessibility of occupational labor market information for career planning. The System was developed at the University of Oregon and tested in the Oregon Employment Division (5 offices), Oregon Vocational Rehabilitation Division (1 office), and in schools (university, community college, high school, and junior high schools.) Development and testing were supported financially by the U. S. Training and Employment Service, Manpower Administration, U. S. Department of Labor.

Perhaps the most positive response of all the tests was at Churchill High School in Eugene, Oregon. This report presents the findings of the test there. The report's purpose is threefold: to describe the Churchill test, to identify needed System improvements, and to serve as a guide to others who might use OIAS in a high school setting.

OIAS is evaluated from several angles: the likes and dislikes of those who used the System, the effects of the System on their knowledge of occupational information and on their career plans, why other students did not use the System, use of the System in instruction, administrative considerations in using the System, its costs, and the reactions of parents. In addition, several case reports of individual student uses of OIAS are presented.

Special thanks is due to John Clyde, vice principal and counselor at Churchill, who not only participated in the design of OIAS but identified and helped during the test to resolve many problems while they were still small. Likewise, the patience of Principal Charles Zollinger and other members of the Churchill staff with our experimentation, changes, interruptions, and evaluations should not go unmentioned.

II. ABSTRACT

The Occupational Information Access System proved very attractive to students at Churchill High School. Half the student body of 1,040 used the System, mostly without being instructed to do so, without assistance, and without supervision. (The predominant reason why others did not use the System was a lack of knowledge of its availability.) Repeat usage was common; there were an average of 2.3 uses per student. Afterward 84 percent said they were satisfied or very satisfied with the System, and 77 percent had recommended it to a friend. While some were attracted only by the novel opportunity to use a teletype terminal, being "personally interested in looking for occupational information" was the most frequent reason given for using the System. There are numerous instances of students who began using the System because they were "curious about the computer" but who became seriously involved in career exploration as they used OIAS.

Most students used both the QUEST Questionnaire, which yields a list of occupational titles to explore, and the occupational Descriptions, which tell briefly about job duties, hiring requirements, employment prospects, training opportunities and related items. They rated the Descriptions "fun to use" (99% of the users), "easy to understand" (95%), "accurate and up-to-date" (95%), and said they "related the job to my own interests, values, and abilities" (81%). They gave high marks to the Questionnaire on these same factors.

There is evidence that OIAS did more than interest the students; it actually helped them in career planning. Seventy percent said the list of occupational titles gave them some new occupations that they would seriously consider for future work. In analyzing the certainty of students' career plans, it appears that students are more certain after using the System than before, and they are more certain than their classmates who did not use the System. Furthermore, in a test of knowledge about their intended career fields, students who used the System consistently showed that they knew more about job prospects than those who did not use the System.

In considering their career futures, students were very much inclined to talk with their parents. About two-thirds talked with their parents about OIAS, and most of them took material home. Parents seemed to have a good understanding of the System and strongly approved of the assistance it gave in their children's career planning.

Parents reported spending as much as three hours discussing career plans with their children as a result of OIAS. (These family discussions averaged about three-fourths of an hour.)

While OIAS was influential with students, it had little impact on established instructional programs. Only about 9 percent of the student body used OIAS in connection with a class assignment, and the bulk of that use was by the career education teachers and the counselors.

What does the program cost? Direct operating costs, including computer time, printed materials, and information updating would total about $2 per student user over a nine month period. Adding the cost of space which might otherwise be used for other purposes brings the total to about $3 per student. Comparative cost analysis reveals that this is only half as expensive as having either a teacher-aide or counselor man an occupational information room.

III. STUDENT REACTION TO OIAS

Introduction. The intent of this section is to report the reaction of students at Churchill High School to their experience with the Occupational Information Access System. Churchill, with a student body of 1,040 students (396 sophomores, 336 juniors, and 308 seniors) is located in a mixed urban and semi-rural area in Eugene, Oregon.

A computerized version of the Occupational Information Access System (OIAS) is situated in a small room near the Student Services

Office, where students may operate the terminal freely without staff surveillance. Each day a secretary simply unlocks the door and logs in the terminal. The terminal was originally installed in the school and continues to be used for administrative record keeping; however, it normally remains available for student use with OIAS about six hours per day. Due to a flexible class schedule at Churchill, students have time during the school day to use such things as OIAS. OIAS was operative at Churchill for about 5 months (January - May) during the 1970-71 school year.

The two groups of students examined, identified as System "users" and "non-users," were each asked to fill out a questionnaire at the end of the school year. While the principal interest is the reaction of System users, non-users furnish some significant data on why they did not use OIAS, their knowledge of certain occupational information, and their degree of career certainty. This evaluation will proceed along the following lines:

(1) Reasons for using or not using OIAS

(2) An assessment of student opinion of the System's major components: the Questionnaire, Bibliography, Descriptions, Personal Visits, and Cassette Recordings

(3) The amount and kind of satisfaction experienced in using OIAS

(4) The System's effect on career certainty

(5) The impact of OIAS on knowledge of occupational information

(6) Suggestions on how the System can be improved

Before proceeding, however, it might be useful to provide a profile of our two samples. The total number of users questioned equaled 126; non-users questioned totaled 143. Questionnaires were administered in classes selected to yield a random sample of students. This procedure was used so that non-users as well as users could be identified for questioning. Having students fill the questionnaire out in the classroom lent itself to increasing the response rate and was administratively convenient.

The sample shows some bias toward younger students, but otherwise appears reasonably representative of the subject population. No significant sample differences between users and non-users were detected.

Reports from students, together with computer use records, reveal that about half the students in the school (between 500 and 600 of the 1,040 student body) used the System during its five month test. Most users made repeated use of it. The average number of times the System was used per student equaled 2.3. The average total time the student spent using the System was somewhat over one hour.

Reasons for Using or Not Using OIAS

Students who did not use the System were asked why. Non-users gave the following reasons:

		Per Cent of Non-Users	Approximate Per-Cent of Student Body
(1)	I never heard of OIAS	20%	10%
(2)	I heard about it and probably would have used it, but I didn't know how	19	9

		Per Cent of Non-Users	Approximate Per-Cent of Student Body
(3)	I didn't have time	11	6
(4)	I heard about it and probably would have used it, but I didn't know I could	10	5
(5)	I heard about it, but I wasn't interested in occupational information	10	5
(6)	I didn't need it because I already know what I am going to do	8	4
(7)	It was too crowded when I wanted to use it	5	3
(8)	I didn't need it because I'm going to college	4	2
(9)	I heard it wasn't very helpful	4	2
(10)	Computers are too impersonal	3	1
(11)	I heard it was pretty hard to use	2	1
(12)	It was broken down when I tried to use it	2	1
(13)	It was closed when I wanted to use it	2	1

"Never heard of OIAS" was the most frequent reason for not using the System, but that reason was given by only about twenty percent of the non-users (ten percent of all students), which means that around 90 percent of the student body has at least heard of OIAS, if not used it. This is particularly impressive when one considers that

the chief means by which students found out about OIAS was by word of mouth. The only official publicity the System received was from one counselor who visited departmental staff meetings and a few classes to discuss the System's availability.

Another nineteen percent of the non-users (10% of the student body) "didn't know how" to use the System, but this too seems low, considering the fact there was no organized instruction in use of the System. Students learned how from written material available in the room or from each other. Other students knew of the System, but did not know it was available to them. In all, half or more of the non-use is attributable to lack of knowledge about the System.

Responses such as "too crowded" and "closed when I wanted to use it" indicate an attractiveness which was not anticipated. Certainly if the System were unpopular these responses would never have been given. It should be noted that these responses were not prelisted, but were written in by respondents to the non-user questionnaire, indicating that these non-users felt rather strongly about OIAS being "too crowded" or "closed." Many of the written suggestions from System users suggest that users had similar complaints.

The infrequency with which certain other responses were marked is also striking. A surprisingly small 4 percent of the students surveyed said they already knew what they were going to do so they did not need to use an information system. Similarly only 2 percent of the students

subscribed to the fallacious assertion that they did not need occupational information because they are going to college

Computers are frequently said to be depersonalizing, yet only 3 percent of the non-users ($1\frac{1}{2}$ percent of the student body) said they did not use the System because they thought computers are too impersonal.

Negative reaction to the System itself was also very limited. Only 4 percent of the non-users (2 percent of the student body) had heard the System was not very helpful, and only 2 percent of non-users (1 percent of the student body) indicated they failed to use it because they heard it was hard to use.

Summarizing, the non-use can be attributed to the following:

		Per Cent of Non-Users	Approximate Per-Cent of Student Body
	TOTAL	100	50
(1)	Lack of knowledge about the System (response items (1), (2), and (4))	49	24
(2)	Lack of interest by the student (items (3) and (5))	21	11
(3)	Student opinion that they do not need occupational information (items (6) and (8))	12	6
(4)	Limited availability (6 hrs/day for 5 months) (items (7), (12), and (13))	9	5
(5)	Reported weaknesses in OIAS (items (9), (10), and (11))	9	4

Students who used the System were also asked why. The most predominant response was "personally interested in looking for occupational information" (41%). This was followed by the response of "curious about the computer" (32%), "class assignment" (18%), and "counselor or teacher recommendation" (6%). (Three percent gave other reasons.) It is interesting to note that about three fourths of the use represents some sort of self-motivation on the student's part.[1] Of this figure a significant portion may be attributed to the System's attractiveness.

These data are consistent with the findings at Lane Community College where a majority of users also said they used the System out of self-motivation. The Lane Community College group used the System as a result of a class assignment 32 percent of the time. This is roughly analogous to the Churchill findings where 18 percent attributed their using OIAS to a class assignment. Of the high school students who used OIAS because they were assigned to do so, 79 percent said they

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[1]There is some indication that curiosity about the computer may be a more common initial reason for using the System than is indicated here. A report on the System prepared for the project staff by a student at Churchill says that the novelty was the initial reason why many students used the System. However, there are repeated instances of casually curious students becoming seriously involved in career exploration after using the System.

were either "satisfied" or "very satisfied" with the results. The incidence of teacher usage in these two schools and the resulting student satisfaction suggests that OIAS can be successfully used in connection with an instructional program. (For further evaluation of classroom use, see Section VII of this report.)

Assessment of the System's Major Components

A careful review of the literature reveals certain characteristics of an ideal occupational information delivery system.

Most authorities agree that a model occupational information delivery system should:

(1) Make information accessible to persons of varying ability and experience

(2) Provide a means for integrating occupational information with clients' interests, values, aptitudes, and abilities

(3) Deliver information through various media

(4) Display and/or deliver information in an attractive manner

(5) Provide accurate and current information, including capacity for updating

(6) Supply local as well as national data

(7) Provide information concerning a wide variety of occupational groups

(8) Include such specific information as (a) job duties, (b) work environment, (c) hiring and training requirements, (d) terms of employment, (e) hours, (f) current labor market situation and (g) long-range outlook

The evaluation at Churchill relates directly to these eight criteria.

The "user" questionnaire allows analysis of different features of several major System components, revealing what parts of the System were used most, and discovering which components were perceived to be most valuable.

Descriptions

In analyzing OIAS's Job Description, users were asked whether the Descriptions related the job to the interests, values and abilities of the user, whether they were easy to understand, fun to use, complete, and accurate and up-to-date. Given a choice of 4 responses to each of these questions about the Descriptions ("yes, definitely;" "yes;" "no;" and "definitely not"), virtually all users said the Descriptions were fun to use, easy to understand, accurate, and up-to-date. Substantial majorities also said they related jobs to personal interests, values, and abilities, and were complete.

Student User Assessment of OIAS Job Descriptions

	AFFIRMATIVE			NEGATIVE		
	Total	Yes Definitely	Yes	Total	No	Definitely Not
1. "Fun to use" (n = 114)	99%	51%	48%	1%	0%	1%
2. "Easy to Understand" (n = 114)	95	35	60	5	4	1
3. "Accurate and up-to-date" (n = 116)	95	28	67	5	4	1

Student User Assessment of OIAS Job Descriptions (continued)

	AFFIRMATIVE			NEGATIVE		
	Total	Yes Definitely	Yes	Total	No	Definitely Not
4. "Related the job to my own interests, values, and abilities" (n = 109)	81%	26%	55%	19%	13%	6
5. "Complete (covered all important topics)" (n = 110)	67	23	44	33	26	7

The great attractiveness of the System, which has appeared in every evaluation of students and clients (though not of counselors and teachers), is evidenced here, where 99 percent of the users said the System was fun to use. This seems to be a reflection of the computer terminal's attractiveness as an information display device that presents only the information requested and provides a copy for the user to take with him. The amount of time required for a Description to print out (about three minutes) has been criticized by some computer personnel and vocational educators as boring. Students do not agree. (For a student's assessment of this feature, see Case Report #1 in Section XI of this report.)

The feeling that the OIAS Descriptions are "easy to understand", expressed by 95 percent of the high school students who used the System, is striking because the material is not easy to understand by conventional readability formula standards. Research on the readability of OIAS Descriptions indicates that the style is probably no easier to read than

other standard occupational information such as the Occupational Outlook Handbook, being "very difficult" according to one readability formula and at the 13-15th grade reading level according to another. (See "Validity and Readability of the Occupational Information Access System Quest Questionnaire.")

User motivation, the limited length of the material to be read (250 words), and the "liveliness" imparted to the script by the operating teletype seem to compensate for material which is fairly technical in nature and whose style is fairly typical of occupational information.

Another consequence of computer linked teletype presentation of occupational material is that users, at least high school students, perceive the information as highly accurate and up-to-date. (High school students are obviously not in a position to judge such matters, but it is important to know their perceptions.) In fact, the OIAS Descriptions are no more accurate and only somewhat more up-to-date than comparable occupational information, which, when printed in book form, generally receive poor marks on this score.

The descriptions receive less favorable evaluations on personal relevance (81 percent favorable) and completeness (67 percent favorable). Occupational information has traditionally been weak in relating the "personal" aspects of jobs, and the present versions of the OIAS Descriptions are probably not much better than most on this matter.

(It must be remembered that the OIAS project was undertaken principally to develop a delivery system, not new information, style, etc., as much as these are needed. Some work has been done on these problems of content and style, but the OIAS project has not been able to undertake a major information development effort.) Providing more detailed information about course-work appropriate for particular occupations would undoubtedly increase the completeness of the Descriptions in the eyes of high school students (e.g., see Case Report #2 in Section XI.) Current job openings and additional occupations were other information additions requested. Considering the high "ease of understanding" rating given the Descriptions, one might experiment with somewhat longer Descriptions which would hold more information. However, additional work on format might permit storage of more information within the present sized file.

Questionnaire

Some of the questions asked about the Descriptions were also asked about the Questionnaire. Like the Descriptions, the Questionnaire was overwhelmingly rated "easy to understand", (94%), and "fun to use", (92%). There was also general agreement that it asked relevant questions, (85%), and "related occupations to my own interests, values, and abilities", (75%), and suggested new occupations of personal relevance (70%). (Readability tests conducted on the Questionnaire also rated it

easy to understand. Using the teletype to enter responses to Questionnaire answers can also be perceived as being fun, although apparently not as much fun as seeing the terminal type out the Description.

STUDENT USER ASSESSMENT OF OIAS QUESTIONNAIRE AND LIST

	AFFIRMATIVE			NEGATIVE		
	Total	Yes Definitely	Yes	Total	No	Definitely Not
"Easy to Understand" (n = 110)	94%	47%	47%	6%	6%	0%
"Fun to Use" (n = 111)	92	36	56	8	8	0
"Asked Relevant Questions" (n = 110)	85	23	62	15	13	2
"Related occupations to my own interests, values, and abilities (n = 106)	75	26	49	25	17	8
Did the list of occupations from the terminal give you some new occupations that you would seriously consider for future work? (n = 123)	70	20	50	30	25	5

The weakest, though still affirmative, response (70 percent affirmative) appears in relation to the question "Did the list of occupations from the terminal give you some new occupations that you would seriously consider for future work?" This is a considerably more rigorous test than the other four, and it is especially encouraging that

this Questionnaire definitely broadened the career options for 20 percent of the users and may have done so for another 50 percent. (See Case Reports #2 and #5.) Since System output was virtually all self-interpreted by the students, this result and the positive feeling that the Questionnaire related occupations to personal interests, values, and abilities can only be attributed to the Questionnaire and list material themselves. Where the resulting list was criticized, it was often because not every occupation on the list met the user's personal preferences.

Personal Visits

Like the other components, personal visits received a majority of positive answers on all questions. However, this positive majority was not as strong as it was with the other components.

STUDENT USER ASSESSMENT OF OIAS VISITS

	AFFIRMATIVE			NEGATIVE		
	Total	Yes Definitely	Yes	Total	No	Definitely Not
"Objective about the advantages and disadvantages of the occupation" (n = 15)	80%	27%	53%	20%	13%	7
"Easy to set up appointment" (n = 15)	80	13	67	20	13	7
"Willing to take time to talk" (n = 15)	80	13	67	20	13	7
"Gave a good idea of what the work was really like" (n = 15)	67	27	40	33	33	0

However, the most serious reservations one might have about such a procedure - that people might not be willing to take enough time with youngsters or that they might try to "promote" their occupation - were not problems in the estimation of the few students who actually made occupational visits.

In all, 12 percent of the users said they made visits. It is possible that more use of this component would have resulted if this part of OIAS had received more counselor coordination. Teachers and counselors reported considerable use of visits as a source of guest speakers and for field trips for small groups of students.

Component Usage

As for the use of various components, the Questionnaire and the Descriptions were used by virtually all users, while the remaining information files received use by a minority of students.

FREQUENCY OF OIAS COMPONENT USE

	Number of Uses Reported by Evaluation Sample (n = 126)	Percent of Users	Percent of Users rating it most valuable (n = 126)
Questionnaire - List	124	98%	31%
Job Descriptions	122	97	48
Cassette Recordings	42	33	2
Bibliography Notebook	17	13	6
Personal Visits	15	12	4

The Descriptions and the Questionnaire received the most votes as the most valuable components of the System. However, those few students who used the Bibliography and/or the Personal Visits were quite likely to rate them as the most valuable. Very few of the students thought the interview cassettes were the most valuable. These results are generally consistent with those found a year ago in a smaller scale evaluation at Churchill,[2] except that much more use was made of the Descriptions and the Bibliography-Books during this year's five month test than during last year's one month test. This fact, together with the high degree of repeat usage (2.3 uses per student), indicates that students tend to use the Questionnaire on their first visit and explore occupational information more fully during subsequent uses. (See, for example, Case Report #1.) The goal of delivering occupational information is most effectively met when students have opportunities for repeated use of the System.

While speaking of component usage, it might be worthwhile to examine which facets of the System were used in relation to the information sought. In trying to identify and acquire names of occupations, students used the Questionnaire more toward this end. This is logical since the Questionnaire contains an extensive list of occupations found in

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[2]Bruce McKinlay and Larry L. Ross, Evaluation of Occupational Information Access System in Six Pilot Agencies, [Eugene, Oregon: University of Oregon, Bureau of Governmental Research and Service, 1970] p. 24

the repertoire of the System. In looking for general information about a particular occupation, students used the Descriptions most. In searching for specific information about a particular occupation, both the Questionnaire and the Descriptions were used.

The Bibliography was used principally for getting specific information, while the Cassettes and Visits were used principally for identifying occupations to explore and for general information. This usage demonstrates that, if the user knows what type of information he is looking for, he is able to determine the appropriate parts of the System to use without staff assistance.

Satisfaction with System

Responding to the question, "How satisfied were you with the information you received from OIAS?" Churchill users indicated the following:

	N	%
Total	126	100
Very satisfied	31	25
Satisfied	75	59
Dissatisfied	18	14
Very dissatisfied	2	2

Eighty-four percent of these high school students were satisfied with the information presented. These data are similar to the findings in Ross's study at Lane Community College. In his sample 84 percent of the users were satisfied, with an even greater percentage being very

satisfied.[3]

A more complete picture of user satisfaction may be obtained by examining some of the related responses dealing with satisfaction. In answer to the question, "Were you able to find the information you were looking for?" 87 percent said "yes." As to whether or not the individual experienced any problems using OIAS, 71 percent said "no." Seventy-seven percent of the respondents said they had recommended OIAS to a friend. Finally, 86 percent said they would want to use OIAS again at a later date. This last response is highly consistent with the earlier evaluation conducted at Churchill, where 88 percent of the respondents indicated that they wanted to keep the System at Churchill.[4]

Somewhat positive responses are to be expected in rating scales of the type used here, but the very low percentage of strongly negative feeling is noteworthy. Also noteworthy is the fact that, in most cases, the strongly affirmative, "definitely yes" response alone exceeds all negative responses.

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[3]Larry Lynn Ross. The Effectiveness of Two Systems for Delivering Occupational Information: A Comparative Analysis. (Master's Thesis, University of Oregon, August, 1971), pp. 38-43.

[4]McKinlay and Ross, Pilot Agencies, p. 22

The exuberance shown by students in this evaluation was not so apparent in the evaluation of OIAS done by a Churchill student, Jim Ralph. This student, after talking with his friends and some other students, reached the conclusion that student reaction to OIAS (as to most things) was "kind of apathetic." He added:

> There were a few peopie, though, who felt rather strongly toward OIAS. Most often those who had good things to say about it said that the System had done them a great service by making them aware of their future life which has been kind of neglected by the often untimely education they have been receiving, and helped them start to plan for it. Those who didn't like the System felt that way because they found its suggestions to be too general and vague.

IV. EFFECT OF OIAS ON CAREER CERTAINTY

The ultimate test of an occupational information system is its impact on labor market performance. Attractiveness and ease of use, which have been analyzed above, are necessary conditions for its use, but are not sufficient justification for its continuation. Effectiveness must also be demonstrated.

Unfortunately, the limited time-frame of this test and evaluation precludes evaluation in terms of actual labor market behavior of users as opposed to non-users. But two measures of effectiveness are available from the Churchill evaluation - the effect of OIAS on career

certainty and the effect of OIAS on knowledge of occupational information.

In the Churchill sample, career certainty has been examined by comparing the responses of non-users, users before they used OIAS, and users after they used OIAS. The results of this comparison are presented below:

"How certain are you about your future career?"

Response	Non-users	Users Before Using OIAS	Users After Using OIAS
Total	100%	100%	100%
Very certain	16	10	18
Certain	32	35	36
Uncertain	45	42	40
Very uncertain	7	13	6

These results provide some indication that students after using OIAS are more certain about their career goals than they had before they used the System. Users also showed more certainty than non-users. Differences appear to be greatest in the more extreme responses to this question. In other words, those who used OIAS felt less "very uncertain" and more "very certain" about a future career. These data parallel what Ross found with his Lane Community College sample. In response to this same question he found that 28 percent of the OIAS users increased their career certainty, while no one experienced a

decrease in certainty.[5] These findings are also consistent with those found in the previous Churchill evaluation. In that study, the majority of the students said that OIAS really helped them in making occupational decisions for the future.[6]

The question, "Did the list of occupations from the terminal give you some new occupations that you would seriously consider for future work?" also indicates the effect of the System on career planning. In responding to this question 20 percent of the users said "definitely yes;" 25 percent said "yes," 50 percent said "no;" and only 5 percent said "definitely not." (See Case Reports #2 and #5.) This same question showed similar results in the original evaluation conducted at Churchill.[7]

The use of OIAS by high school students helps them identify potential career fields and probably increases their career certainty.

V. OIAS AS A TOOL FOR IMPROVING KNOWLEDGE OF OCCUPATIONAL INFORMATION

To measure whether any learning took place as a result of students using OIAS, respondents were asked to describe the "employment prospects" for an occupation they felt they would like to follow as a career. The purpose here was to discover whether students who used OIAS knew more about the occupations they plan to enter than students who did not.

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[5] Ross, Comparative Analysis, p. 69

[6] McKinlay and Ross, Pilot Agencies, p. 25

[7] Ibid., p. 25

To make these comparisons, scores of 1, 2, or 3 were assigned to responses which represented "close agreement;" "fair agreement;" and "poor agreement," respectively between the student's statement and existing labor market data. Questions inquiring about both the current local outlook and national outlook were analyzed in this way.

The results indicate that non-users had a mean score of 1.80 for local prospects compared to a lower (better) mean of 1.36 for users. A chi square analysis indicates these differences are significant at the .001 level. For national prospects, the mean of 1.78 for non-users was again higher (poorer) than that of 1.46 for users (significant at .05.) Even though the numerical range is small, it is apparent that System users had a measurably more realistic perspective on the employment outlook for the occupation of interest to them. Respondents from both groups had a fair or better assessment of the employment prospects for their occupation. (For an interesting, non-personal use of the System, see Case Report #4.)

Data collected from small-sample evaluations conducted by the OIAS staff at Shasta and Jefferson Junior High Schools complement the findings above. In these two schools learning was measured by giving a "job information test" to users and non-users of the System. Objective questions asked about job duties, earnings, and educational requirements for a pre-selected list of occupations. A second part of

the test asked students to list all of the occupations they could think of and to check those occupations from their list that they felt they could follow as a career. These tests indicated that junior high school users not only scored better on the objective part of these tests but were able to list twice as many occupations as non-users, strongly indicating that some learning took place as a result of using the System.[8]

Summary

This study represents the most systematic and extensive evaluation thus far conducted of high school student use of the OIAS System. To recapitulate, some of the more salient reactions of students are presented below:

(1) The most frequent reasons cited by non-users of OIAS for not using the System were "never heard of OIAS" and "didn't know how to use it." In addition, a significant number indicated that they did not use the System since it was too crowded or closed when they wanted to use it.

(2) Being "personally interested in looking for occupational information" was the most frequent reason why OIAS was used, with the response of "curious about the computer" being a close second.

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[8]Leonard Adams and Lawrence Fowler. "Vocational Counseling at the Junior High Level: A Case Study of Shasta Junior High." [Eugene, Oregon: University of Oregon, Bureau of Governmental Research and Service, March 1971].

(3) Assessment of the System's major components revealed that the Descriptions and Questionnaire were used most and were perceived to be the most valuable components. Answers to specific questions dealing with the nature of each component all showed strong, positive responses.

(4) Eighty-four percent of the respondents who used the System said they were either "very satisfied" or "satisfied" with the performance of OIAS. In addition, 87 percent of the students said they were able to find the information they were looking for; 86 percent said they would use it again at a later date; 71 percent said they had no problems in using the System; and 77 percent of the respondents said they had recommended OIAS to a friend.

(5) Users experienced greater career certainty as a result of being exposed to OIAS.

(6) Evidence of learning was recorded as a result of using OIAS as Users were better able to accurately describe employment prospects for an occupation they felt they would like to follow as a career relative to the responses given by Non-users.

VI. SUGGESTIONS FOR SYSTEM IMPROVEMENT

Critical feedback is the essence of an evaluation of this nature. Only by analyzing other's suggestions and sources of discontent are systemic improvements possible. Several questions in this analysis were

designed toward this end. One of the more important ones asks, "What changes or additions can you think of that would improve OIAS?" The following represents some of the student's comments in answer to this question:

> "Have more time with it and more questions on the questionnaire"
> "Get two of them--I could never get in to use it because of all the people"
> "Design it so it would look something like help wanted ads"
> "Give it a voice"
> "Have more information relating to jobs here and now"
> "To have questions apply a little more to finding your occupational interest"
> "Faster answers, I had to wait a long time"
> "Have OIAS answer questions"
> "Provide a longer list of occupations"
> "More detailed information about jobs"
> "Have jobs available section like employment agencies"
> "More information on local opportunities; have it tell us how to prepare in high school for an occupation"
> "It should ask more about personal interests and abilities; not so much on where you want to live and how much school you want"
> "It should include more jobs such as modeling"
> "A questionnaire that can narrow your potential jobs better"
> "Of course with the input the terminal receives, it is difficult for the question-answer process to be quicker. I would like it to go faster"

Another question which elicited suggestions was, "What information would you like to have that OIAS was unable to offer?" Many of the same answers as found in the quotes above appeared again. Most respondents here did not suggest new information, but instead critiqued existing aspects of the System. Basically these criticisms advocated increased specificity of the information. Such items as furnishing more names of occupations, providing more information on age requirements,

furnishing more detailed information about salaries, and in general providing more detailed information about a particular occupation appeared most often. As far as proposing new information which OIAS does not currently offer, suggestions such as "provide information on how to look for jobs," and "list information on current job openings" were made.

A final source of suggestions, mentioned briefly earlier, can be found in some of the reasons why non-users did not use the System. Specifically such responses as "too crowded" and "closed when I wanted to use it" indicate that operations need to be expanded. At the same time, they compliment the attractiveness of the System. The responses of "didn't know I could" and "never heard of OIAS" suggest increasing publicity of the System in situations where and when it is needed.

Suggestions on improvement brought forth in this evaluation have been numerous and varied. Many of the improvements advocated, such as those suggesting greater accessibility and faster response time, have been known by the OIAS staff for some time. Nevertheless, many creative and substantive remarks have been made that will be used when further improvements and modifications in the System occur.

USE OF OIAS MATERIALS IN INSTRUCTION AND COUNSELING

Introduction

The purpose of this section is to evaluate the impact of OIAS

on established instructional and counseling programs. Integration of OIAS materials into on-going school programs was not one of the objectives of the Churchill test, and no particular efforts along this line were made by the OIAS staff. Still, one would hope that a System which is so attractive to students would stimulate use by staff as well. To obtain reports of such usage, a Questionnaire was delivered to a sample of teachers. Fifteen Questionnaires were returned, which was about half the number distributed. (Summer break prevented follow-up with non-respondents.)

This sample, though small, appears fairly representative, in that the amount of use reported by teachers is consistent with the class related use reported by students in a much larger and better controlled sample. In that survey about 9 percent of the student body reported using the System as a class assignment, and another 3 percent as a result of counselor or teacher recommendation.

Usage by Teachers and Counselors

The following table shows that, even though teachers in a variety of departments knew of OIAS, only those in career education and counseling used it. Teachers who knew of OIAS reported learning of it from faculty meetings (one counselor made a point of explaining the System's availability at faculty and departmental meetings) and from students.

Teacher and Counselor Use of OIAS

Department	Respondents	Respondents who knew of OIAS	Respondents who used OIAS
Total	15	15	6
Counseling	3	3	3
Career Education (Business Ed., Drafting, Metals)	3	3	3
Math Science	4	4	0
Social Studies	3	3	0
English	2	2	0

Several of the teachers who did not use the System in their instruction did recommend it to a few students individually, and one social studies teacher said, "All my classes were made aware of it. I used it myself and recommended it to my students."

All in all, however, OIAS apparently had little impact on established counseling and instructional programs. Conversations with some of the teachers and counselors who used the System revealed that the usage frequently, though not always, consisted of making an assignment for independent use by the student. This is probably appropriate usage, especially in career education courses, and students who used the System as a result of a class assignment were satisfied with the results (see Section III: Student Reaction to OIAS). Still, it shows that OIAS was used more as a referral source than as a resource for faculty themselves. (This conclusion does not prove that

the curriculum is devoid of occupational information, for other sources may be used, though such usage is usually judged to be inadequate.)

Even though this referral usage appears to be effective for students, it can create some problems for teachers. OIAS can prompt students to ask questions which the teacher may feel unqualified to answer, if the teacher is unfamiliar with occupational information and career counseling. Two teachers reported not knowing what to do with counseling needs identified during the use of OIAS. (They did not refer them to counselors.) Scheduling class work around individual OIAS usage and interpretation can also be difficult.

One teacher suggested, "some type of follow-up on their interpretation of their findings -- some counseling toward effective evaluation and utilization of the printouts." Further discussion with teachers and counselors resulted in the idea of a "counselor in the classroom" arrangement, whereby a counselor could assist a teacher with his class -- doing career counseling -- during a "careers" instructional unit where OIAS was to be used.

One instructional innovation, which made considerable use of OIAS, was a new, short-course called "Careers and Values." Taught by Wayne Hill, a counselor, this course provided an opportunity for students to examine their own interests and goals and the relevance of

career choice. It also dealt with skill development in inter-personal relations. The counselor-teacher said that students liked OIAS best of the class's several activities, followed by occupational visits (everyone had to do a visit) and the Kuder occupational interest inventory. He said that OIAS identified new pertinent occupational areas to many students and he plans to use OIAS most intensively in the course next year.

Teachers and counselors who used the System were reluctant to estimate time savings, though one said "5 hours," one "3 hours," and one said "several hours."

Conclusion

Teacher usage was not one of the objectives of the Churchill test, and OIAS received only limited usage as a resource for teachers and counselors. Those circumstances, however, make the Churchill test an even more dramatic demonstration that OIAS, standing alone, will receive extensive student use and will produce positive results. With the exception of a new career-planning course, usage by faculty was somewhat tentative, but all of those who used the System said it made it possible for them to use information in instruction which they would not have used otherwise; all agreed that they would use the System again; and most volunteered that they would use it "more extensively next time." The opportunity and need for innovation in the use of career information in regular instruction and counseling seems to be substantial.

VIII. ADMINISTRATIVE EVALUATION OF THE PLACE OF OIAS IN THE SCHOOL

Introduction

One of the objectives of the 1971 Churchill test was to examine the compatibility of OIAS with other uses of the computer and teletype terminals. (Remember that OTIS, the computer service bureau which is operating OIAS, primarily serves schools with student records, accounting, and related administrative services.) Use of the same terminals for both administrative record keeping and OIAS can save the cost of a second terminal, a saving of about $1000 per school per year.

Information for this evaluation was obtained from computer use records and from interviews with the school principal, vice principal for student services, and the secretary responsible for use of the teletype terminal.

"Time-Lock" Security

Large-scale independent student use required relocation of the terminal from the secretarial office to a separate room. A pre-requisite to this multiple use is a fool-proof way of securing student record files while students have unsupervised access to the teletype terminal for use of OIAS. To meet this need a "time-lock" was finally perfected and programmed into the OTIS computer system. This feature permits the person logging into OIAS to designate a number of minutes

during which the System can only remain on that program. Thus the secretary, in logging into OIAS each morning, designates, say, 360 minutes (6 hours.) During that time nobody at the terminal can log out of the OIAS program and access student records. At the end of that time, the secretary either begins using the terminal herself or provides more time (with time-lock security) for student use with OIAS.

Several attempts were made by students to log out of the OIAS program and into student records where they could change grades or attendance records. None was successful.

While the time-lock security system makes independent student use of the terminal safe, it also precludes staff access to student records during that time (without utilizing special over-ride procedures which involve a telephone call to OTIS central), but the staff judged that to be a minor inconvenience.

The time-lock security seems completely effective, provided the secretary logs in properly and physically secures the terminal at the end of the prescribed period.

Multiple use of the terminal, while safe and effective, does create competing demands for the terminal, and some conflict between students and attendance secretaries is probably inevitable, although the Churchill secretary reported this was a problem only if the computer was out of commission during the time she had intended to use the terminal. (Students also complained of the System not always being

available.) To minimize competing claims (among students as well as between students and secretaries) Churchill developed a weekly schedule for terminal usage.

Other Secretarial Involvement

Though the secretarial desk is only a few feet from the room where OIAS is housed, the secretary received virtually no requests for help, except when the computer system was down. Her involvement with OIAS was limited almost entirely to logging the System in, which takes about 15 minutes per week, she estimated. She commented that there is less "playing around" with the terminal this year than last, partly because the terminal, though freely accessible to students, is in a less public place so there is no audience for those who would play around. The more distant location, outside the office area, presented no particular problems for the office staff, she reported, and removed the annoying noise of the operating teletype.

The principal similarly observed that there was some playing around with the terminal, but that it was not a problem requiring any changes.[9] He observed that there would be some playing around, even if a staff member were assigned to watch. (See Section IX: Costs of Operating OIAS for comparative cost figures with and without staff supervision.)

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[9]Sometimes those who initially use the System out of curiosity become involved in serious career planning. See Case Report #1.

IX. COSTS OF OPERATING OIAS

Introduction

The purpose of this section is to measure the annual cost of operating the Occupational Information Access System in a setting such as Churchill High School and to compare it to two alternative models for delivering occupational information. The first alternative assumes that OIAS operates with a full time paraprofessional monitoring the System. The second model assumes that a paraprofessional, or teacher aide, supplied with printed occupational literature and materials, is the means by which occupational information is dispersed, instead of OIAS. This analysis will proceed by presenting, first, a cost model of OIAS the way it currently operates -- on an unmonitored basis.

The methodology used to calculate costs in this analysis was first used in a study conducted by Larry L. Ross entitled "The Effectiveness of Two Systems for Delivering Occupational Information: A Comparative Analysis."[10] Ross examined the cost and effectiveness of OIAS as compared to the conventional counselor system of delivering occupational information at Lane Community College. A similar procedure will be used to analyze data collected from Churchill High School.

The Cost of OIAS on an Unmonitored Basis

The following data are requisite for this calculation.

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[10]Ross, pp. 38-43

OIAS Cost Model 1: Unmonitored

Given:
-- 9 months (180 work days) per year
-- 6 hours of System accessability per day
-- Total space used for OIAS at Churchill High: about 200 sq. ft.
-- Fair monthly rental value of OIAS space: $.35/sq. ft. per month. (Note: This market rate is probably higher than the actual cost to the school of constructing and maintaining the space.)
-- "Questionnaire" printing cost: $.08/Questionnaire (Note: Large-scale printing could reduce this cost.)
-- "Introduction" printing cost: $.035/Introduction (Note: Large-scale printing could reduce this cost.)
-- Book costs: $7.50/set
-- Bibliography cost: $6.00/Bibliography
-- 1 set of tapes (25 tapes): $112.50. (Note: Actually only about a dozen tapes were used, but at least 25 are needed for effective coverage.)
-- Tape player cost: $30.00. (Approximate cost.)
-- Average System use time/user: 1.15 clock hours

-- Average terminal operation time/user: .45 terminal hours (28 minutes per user). (Note: Terminal time for each user averages 12 minutes, but each student uses the System an average of 2.3 times.)

-- Terminal costs: $3.00/hour

-- Updating costs: $.50/user (approximately).

(1) Cost of Materials

With approximately full utilization of the System, about 900 students could be served during a school year. By dividing average System use time per user (1.15 hours) into the total possible number of hours each year (6 hours per day for 180 days = 1080 hours) yields 939 students. How reasonable is it to assume relatively full usage? Since January, the date of the System's installation at Churchill, OIAS terminal use records indicate that as many as 500-600 students used the System. In addition, a large portion of non-users reported that they did not use the System because it was "too crowded" or "closed when I wanted to use it." Many others indicated that they "didn't have time," or that they "never heard of OIAS." Since the System was not in operation a full school year, and since it received such exuberant usage during the time it was installed,

it is not unreasonable to assume that as many as 900 students would have used the OIAS during the course of a full school year. For these reasons, full System usage (which is 6 hours/day) is assumed for the purposes of these estimates. The total costs of Questionnaires for 900 students will be $72/year (.08 x 900); the total costs of the Introduction will be, assuming some repeat usage, $7.88/year ($.035 x 900 x .25). The annual cost of Bibliography and Books is $13.50, and the yearly cost of the tapes and tape recorder is $47.50, assuming a useful life of 3 years. The total yearly cost of materials is then:

$72.00	annual cost of Questionnaire
7.88	annual cost of Introductions
13.50	annual cost of Bibliography and Books
47.50	annual cost of Tapes and Tape Recorder
$140.88	Total annual cost of materials

By dividing the total annual cost of materials by the estimated 900, the cost per user of materials is found to be approximately $.15.

(2) Per User Cost of Terminal Operation

This cost item is calculated by multiplying $3.00 (hourly cost of terminal operation) x .45 (the average hourly terminal operation time per user.) The result of this computation shows that per student cost of terminal operation is $1.35. ($.60/use, for 2.3 uses per student.)

(3) Per User Information Updating Cost

Maintenance of current and accurate information is essential for effective System operation. An estimate of $.50 per user to keep information files up-to-date has been taken from OIAS records and from a projected budget for OIAS usage in all Lane County secondary schools prepared by the Lane Intermediate Education District.

(4) Direct Program Costs Per User

Summarizing, costs directly incurred by use of the System include the following:

Materials	$ .15
Terminal Time	1.35
Information Updating	.50
Total	$2.00

(5) Per User Space Costs

One of the institutional costs not usually treated explicitly in program cost analysis is the cost of space utilized by the program. At Churchill, OIAS used approximately 200 sq. ft. The fair monthly rental value for office space in Eugene is about $.35/sq. ft./month. (Actual costs of this space to the school district are probably somewhat lower.) Per user space costs may be found by multiplying $.35 x 12 mo. x 200 sq. ft. and dividing by 900. This results in per user space cost of $.93. Other institutional costs, including staff time required for System operation, are nil, since OIAS is a user-operated System. However, integration of System usage into instruction and guidance programs would involve some minor reallocation of staff and materials.

(6) Total Cost Per User

By adding the per user cost of materials, terminal operation, updating, and space, the total cost per user can be found. This sum is

$.15 + $1.35 + $.50 + $.93 = $2.93/user.

Before presenting the second model, it will be useful to point out where this analysis has differed from the one

conducted by Ross. Ross found that the unmonitored cost of OIAS at Lane Community College would be $3.51/user assuming the System is optimumly used, and $4.01/user assuming the actual usage level. A key difference in the total costs per user found at Churchill ($2.93/user) as opposed to Ross' calculation for LCC lies in the fact that the latter had to pay approximately $1,000 for terminal rental (data sets, lease lines, etc.) to use OIAS. This amount did not have to be charged to OIAS at Churchill because Churchill was already using the terminal for other purposes. Another salient difference involves the question of opportunity costs. At LCC, Ross estimated that if a student was not using OIAS, he might be working. Thus his time was assumed to be worth the minimum wage, $1.60/hour. This same assumption cannot be made for high school students, since participation in the labor force is much less than that of college students. Finally, these calculations differ because Ross excluded space costs because the space OIAS occupied was so meager at Lane. Other differences between these two calculations stem from differences in the number of students bearing the costs, the average System use and terminal operation time/user, and the amount of time OIAS is available for student use.

The Cost of OIAS on a Monitored Basis

If OIAS were monitored by a paraprofessional staff member, certain System use time savings might be expected. For instance, there could be less wastage of terminal time due to students "playing around" with the terminal if it were under a monitor's surveillance. In addition, a staff person could help students use the System if they had questions as to its operation, hence facilitating faster use. The question which arises, however, is "Does a staff person benefit total System operation that much when one considers the costs involved?" To arrive at an answer, it is necessary to estimate per user cost under this arrangement.

OIAS Cost Model 2: Monitored

It is obvious that most of the variables for this model also appear in the unmonitored model. The difference is the addition of such variables as wages, benefits, supplies, etc., allotted to the paraprofessional and the reduction in terminal time. A calculation of per user costs under this model simply becomes a matter of adding the previous unmonitored costs per user of $2.93 and per user costs of having a paraprofessional monitor the System.

Given: -- 9 months (180 work days) per year

-- 7 hours of work/day

-- $2.31/hour = mean wage rate for paraprofessional on a six step wage schedule

-- Fringe benefits = $161.70 for 10 days sick leave allowance/year

$ 64.88 for 4 paid holidays/year

$108.00 for medical allowance/year

$144.18 for retirement benefits/year

-- Furniture (amortized over 25 years) and office supplies: approximately $50/year

-- Savings in terminal time: $125/year

Considering the ease with which students learned to use the System, and the time required in situations where use has been directed by a counselor, it is highly unlikely that staff monitoring would significantly change the terminal time required for System use. A savings of 10 percent is assumed here for purposes of this calculation.

The per user cost of adding a paraprofessional staff person may be found by the following calculation:

$$\frac{\text{wages+benefits+supplies \& furniture(amortized)-savings in terminal time}}{\text{total number of student users}}$$

Substituting we have,

$$\frac{\$4,553.40+\$50.00-\$125.00}{900} = \$4.98/\text{per user for the added paraprofessional.}$$

By adding this figure, $4.98, to the per user cost under the unmonitored estimate, $2.93, a sum of $7.74 arises, representing per user cost under the monitored model.

Information Delivery via Paraprofessional without OIAS

Another means sometimes suggested for the delivery of occupational information to high school students is the use of a paraprofessional who functions in the capacity of a resource person, channeling the student to written material about an occupation or occupations. To find out what this type of arrangement would cost a school like Churchill, the following model is worked out.

Cost Model 3: Independent Paraprofessional without OIAS

Given:
- 9 months (180 work days)/year
- 7 hours of work/day
- $2.31 = mean wage rate for paraprofessional on a six step wage schedule
- Fringe benefits: $161.70 for 10 days sick leave allowance/year
  - $ 64.88 for 4 paid holidays/year
  - $108.00 for medical allowance/year
  - $144.18 for retirement benefits/year
- Furniture (amortized over 25 years) and office supplies: $50/year

-- Total information system space used at Churchill:

200 sq. ft.

-- Fair monthly rental value of space: $.35/sq.ft./month

-- Occupational information (all books, and other

written information, amortized): $50/year

-- Information maintenance: $.50/user

The cost of a system of this nature may be found by applying this formula:

$$\frac{\text{wages and benefits+supplies \& furniture(amortized)+space costs + occupational information(amortized) + information maintenance}}{\text{total number of student users}}$$

Substituting we have,

$$\frac{\$4,533.40+\$50.00+\$840.00+\$50.00+\$450.00}{900} = \$6.58/\text{user/year}$$

At first glance this model appears slightly less expensive than the OIAS monitored arrangement (which cost $7.74 per user) but still more than twice as costly as OIAS on an unmonitored basis. In considering this model more carefully, however, the number of users (900) seems unrealistically high. Such conventional systems usually do not attract anything like 80-90 percent of the student body. If this is the case, the fewer number of users the system had, the greater the per user cost. For example, if this system were able to attract as many as 700 students in a year, the per user costs would be $8.52 -- more than OIAS under the monitored model.

Interpretation and Conclusions

A full time paraprofessional delivering occupational information either by means of OIAS or exclusively via written materials is likely to be more than twice as expensive as OIAS the way it currently operates - on an unmonitored basis.

It is doubtful that a delivery system which makes use of only a paraprofessional and some written materials would be as attractive as OIAS. Moreover, since a paraprofessional is not a trained counselor, he can only function as a resource person. Even if the person in this capacity were highly trained, it is doubtful that this type of arrangement would elicit overwhelming student participation. This, of course, is due to the system's lack of excitement and appeal--a requisite for this age group. The terminal and other facets of OIAS, on the other hand, do generate this sort of interest and use by students.

The use of a paraprofessional is not warranted by economic considerations. Moreover, it is not consistent with student's preferences. One of the aspects of OIAS which is attractive to students is the private, independent use which can be made of the System. (See Case Report #2.) Students have expressed a liking for this facet of OIAS over and over again. To remove this privilege by installing some sort of surveillance would not only be uneconomical, but would be detrimental to the popularity of the System as well.

Speaking of economics, it might be noted parenthetically that under the unmonitored arrangement at Churchill, there was not a single incidence of loss, breakage, or vandalism. Moreover, analysis of independent student usage has demonstrated that students do not need assistance in operating the teletype terminal or other equipment used with OIAS. For the sake of minimizing costs and for the sake of continued appeal, it can be concluded that OIAS should be left to operate in its unmonitored context.

X. PARENT EVALUATION OF OIAS

Introduction

The intent of this analysis is to report a brief survey of parents of student users. Prior to this analysis, no data of any kind have been collected measuring the way parents feel about the System. The decision to examine this public has paid off with a number of interesting findings.

Methodology

Feedback from parents as to how they felt about OIAS was obtained by conducting a telephone survey consisting of seven questions. One parent was interviewed in each household. Though a small number, the 33 parents interviewed appear to be a relatively unbiased sample:

(1) Families included in the sample were randomly selected from among System users

(2) The parents questioned represented an admixture of occupations. In other words, there seemed to be no concentration to any one or two occupational areas.

Results

The responses to each question in this survey are presented below. Most of the questions asked required a "yes" or "no" response. Where open-ended responses appear, each parent's paraphrased remarks are presented.

Question 1. - "Did (student's name) tell you about using OIAS?"

Response	Number	Percent
Total	33	100%
Yes	21	64
No	12	36

Question 2. - "Do you think (student's name) should be looking at careers at this time?"

Response	Number	Percent
Total	33	100%
Yes	30	91
No	3	9

Question 3a.- "Did (name) show you any written material about the System such as a Questionnaire, a Description print-out, or a list of occupations?"

Response	Number	Percent
Total	21	100%
Yes	17	81
No	4	19

Question 3b.- (If yes) "What material did he show you?"

Material	Number	Percent
Total	21	100%
List	16	76
Description	3	14
Visit	0	0
Questionnaire	2	10

Note: Includes multiple responses

Question 4a.- "What were your reactions to the System?"

"We were very enthused about the material Randy brought home. He brought several long yellow sheets of typed information home with him and we discussed them thoroughly. He seemed to be particularly interested in being a lawyer."

"Really don't know enough about it to make an assessment."

"I think it is a good system -- I really do. Young people need to be exposed to fresh ideas. I was amused at some of the occupations it said she was suited for -- like a bartender."

Question 4a. (Continued)

"I was very impressed with what it had to offer."

"It didn't pinpoint her interests. She wanted to teach or engage in social work -- the computer said she would be more interested in secretarial kinds of things."

"Sounded real good. Kids certainly should be looking at occupations and careers to follow at this age. It sounds like it would sure beat the calculators we use at work."

"It seemed as if it would be very stimulating. However, I don't think students should feel that they have to follow what the computer recommends in all cases."

"I was pleased to hear that the schools were doing this kind of thing. I was pleased with the written material she brought home. She has taped some of the yellow sheets up in her room."

"I think it's very worthwhile in that it provides kids with occupations they probably never thought about. It provides a lot of opportunities."

"Kids interests at this age change so much that it really isn't valid to say what occupation or occupations they are suited to follow as a career."

"It's O.K. for boys. The future for girls is predetermined."

"It is good because it makes kids start looking toward the future."

"I think its good."

"It's a sound idea and is a catchy way in which to get students interested in occupations. We were really surprised at the difference in the number of occupations the computer said Mike was qualified for in comparison to his girl friend."

"If the student wants only to seek factual information, this system is much better than going to a counselor. My husband and I hope that it will stick around for a while."

"It sounded interesting."

"I was surprised at all of the things she was qualified for. It gives potential college students some direction as to what to major in -- or what not to major in."

"It sounded O. K."

"It is very much needed. I know of a lot of kids who have gone to college who would have done something else if they had had an opportunity to use this system."

"It's the most ridiculous thing I've ever heard of. We laughed about it for days. We know our boy would never be a nurse. It could be very damaging to some individuals who took it seriously."

"It sounded very worthwhile. Dave is looking forward to using it again next year."

Question 4b.- "How extensively did you discuss the System with (name)?"
Question 4c.- "About how much time did you spend discussing the System?"

"Sat down on several occasions and discussed it." (3 hours)
"Not very extensively - talked about it at a meal." (10 minutes)
"We discussed it briefly one night while doing dishes." (15 minutes)
"We sat down briefly after supper and talked about it." ($\frac{1}{2}$ hour)
"Just in passing." (5 minutes)
"Talked about it several different times, but never in any detail." ($\frac{1}{2}$ hour)
"Talked about the System on several occasions but just briefly." ($1\frac{1}{2}$ hours)
"We talked about it after school one day." ($\frac{1}{2}$ hour)
"We talked about his reaction and his friends reactions to the System at least 2 or 3 times." ($\frac{1}{2}$ hour)
"He showed me the list of occupations on the way home from school one day." (10 minutes)

Question 4b and 4c. (Continued)

"Just mentioned it briefly a couple of times." (20 minutes)
"We sat down after dinner and he showed us the yellow sheets of paper which had occupations on them." (1 hour)
"One afternoon he showed me the description of a dentist." (15 minutes)
"We discussed this during a meal and at other occasions very thoroughly." (1 hour)
"We discussed it on a number of occasions." (45 minutes)
"We discussed it off and on." ($\frac{1}{2}$ hour)
"Discussed it quite a lot." (2 hours)
"Just mentioned it." (10 minutes)
"We discussed it after dinner one night." (1 hour)
"We talked about it briefly." (15 minutes)
"We discussed it on many occasions after our evening meal." (2 hours)

It can be seen from the above listing that the amount of time parents and their children spent discussing the material ranged from a few minutes to three hours. Computing a mean from the various responses indicated that parents, on the average, spent about 47 minutes discussing career plans with their son or daughter as a result of OIAS.

Question 5. - "Did your (daughter or son) make an attempt to seek further occupational information after discussing OIAS with you?"

Response	Number	Percent
Total	21	100%
Yes	12	58
No	3	14
Don't know	6	28

Note: The "further occupational information" seemed most often to be additional OIAS materials.

Question 6. - "Do you think (his or her) using the System prompted him to seriously consider a future career(s)?"

Response	Number	Percent
Total	21	100%
Yes	10	47.5
No	10	47.5
Don't know	1	5.0

Question 7. - "Do you feel that the services this System has to offer to students are important enough to warrant its permanent operation in all secondary schools in the community?"

Response	Number	Percent
Total	33	100%
Yes	21	64
No	4	12
Don't know	8	24

Comment on Results

Parents, generally speaking, were very much aware of OIAS's existence. As indicated, 64% of the parents expressed familiarity with the System. It should be pointed out that this represents discussions with only one parent. It is quite possible that the student talked about the System with his other parent (without the interviewed parent's knowledge) causing the actual familiarity percentage to be even higher.

Another impressive finding is the large number of students bringing home visual evidence of their OIAS usage to their parents. A little more than 80% of the students who talked with their parents about OIAS actually showed their parent(s) a list of occupations, a Description print-out, or a Questionnaire.

Even more noteworthy is the fact that parents were, on the average, spending as much as 47 minutes discussing the System materials with their children, often on a number of occasions. Clearly, OIAS stimulated communication between parents and students on the important topic of career planning.

Parents generally exhibited an accurate impression of the purpose of OIAS, and approved of it. Most felt that OIAS was worthwhile, stimulating, and needed. As many as 91% of the parents felt that their daughters and sons should be looking at future careers. This is very significant when one considers the large number of younger (tenth and eleventh grade) students who used OIAS and those students who plan to go to college before entering a career.

Most of these parents also felt that the System stimulated their child to seek further occupational information either by using OIAS again or consulting some other source. The majority of parents thought that the services the System provided were important enough to warrant its permanent usage in all secondary schools in the community.

This analysis seems to suggest the possibility of designing some sort of program for involving parents in the career exploration activities of their children. This could take the form of information about OIAS or a demonstration of the System in use, or it could be the occasion for more extensive involvement of the school and the family in relation to the needs of students.

XI. CASE REPORTS

Following are case reports which give a more detailed look than is possible with the aggregative data presented in earlier sections of this report at the use of OIAS by six Churchill students.

While not a representative sample, these cases are illustrative of some of the conclusions drawn from the more comprehensive survey.

Case #1: (Male, Junior)

Curiosity about the computer terminal was the initial stimulus which attracted this student to use OIAS. After completing the Questionnaire and receiving a list of 33 occupations, this user indicated he became more serious in looking for information about occupations. This seriousness was displayed by his using the System more than a dozen times, exploring via Descriptions 19 of the original 33 occupations on his list. After this effort he concluded that following a career of an architect or an engineer would be best suited to him. After deciding on these occupations, this student said he would be taking more math courses to gain a better quantitative background which he discovered was requisite for these areas.

When asked what was most unique about the System to him, this student replied: "I think that the terminal's typing each word out really captivates the user's attention. Not only is this fun, but the person using it cannot help but read every word. This part of the System to me is the most valuable and helpful." In addition to these comments, this student thought the material was accurate, very readable, and thorough.

Case #2: (Male, Junior)

The most impressive aspect of OIAS according to this student was the System's design allowing for independent use. This student said, "I like it because you don't have to make an appointment with a counselor to use it ..... you can go in on your own and use it without any hassel."

After using the System four times he felt that he would make a good radio or television announcer. He said this particular Description seemed very similar to his personality. He indicated that prior to using OIAS this occupation had never occurred to him.

In evaluating the Questionnaire and Descriptions, this student indicated that they were both easy to understand and fun to use. In addition, he felt that they related to his own interests and values. He did, however, feel that some of the Descriptions should have contained more detailed information.

Experiencing no mechanical difficulties in operating the terminal, this student was, overall, very satisfied with the information he received. He indicated that he was looking forward to using the other components of the System next year, especially the Personal Visits.

Case #3: (Female, Senior)

As in many instances, this individual first used OIAS out of curiosity about the computer terminal. After filling out the Questionnaire and receiving a list of 43 occupations, this student said she was disappointed because she received such a large list of occupations. She indicated that she expected to receive only around three or four. She said she was further displeased when the occupation she was interested in, nursing, was not on her list of 43.

Since nursing was not on the list she received, she was quite critical of the Questionnaire. To improve it she said "more questions need to be added so one's interests can be better determined." After reading two Descriptions dealing with nursing (registered nurse and practical nurse) she felt that they were readable and fun to use. However, she thought that since the System was being used in the high school the Descriptions should be designed to guide the student in selecting his high school curricula - especially for those occupations which do not require a college degree.

Case #3 (continued)

Discovering OIAS late in the school year, this student said she was only able to use the System twice. Despite the fact she was disappointed with the Questionnaire, and to a lesser extent the Descriptions, she said she hoped to use the Personal Visits next fall as she felt that this aspect of the System would be most beneficial to her.

Case #4: (Female, Senior)

This student reported that her decision to use OIAS stemmed from a counselor recommendation. After using the System once, she said that she returned to use it over and over again. Unlike most cases, this student was not using OIAS as a means of seeking names of occupations to explore. Rather, she saw the System as an educational tool -- a device which would increase her own knowledge about different occupations. In her words: "Before and after I used the System I had a pretty good idea of what I wanted to be ..... an elementary school teacher. I used it mainly to learn about new occupations that I didn't know about before. For example, before I used the System I had no idea what a sanitarian was or did." To this individual OIAS was most valuable as an instrument for teaching.

In addition to using the Questionnaire and Descriptions this student also used the Bibliography and Books. She thought that this facet of the System was helpful, but she felt that some sort of orientation would have been helpful before she referred to the books. In other words if she wanted information about job duties, salary, or employment outlook of a particular occupation, she would have liked to have known which was the best source to consult.

Overall, she was very satisfied with the information she received. She felt that the material from the terminal was very clear and concise. She expressed a particular liking for being able to use the System without having someone monitor it.

Case #5: (Male, Senior)

This student indicated extensive use of OIAS as he said he was able to use the Questionnaire, Descriptions, Bibliography, and Cassette recordings. In assessing the Questionnaire and Descriptions, he felt they were both very clear and easy to understand. He was most

Case #5: (continued)

pleased by the fact that the terminal provided him with some tangible information which he could keep. He felt that his list of occupations and the Descriptions which he had taken from the terminal would serve as a handy reference, possibly saving some time if he were to search for the same information at a later date. He felt the Bibliography and Books complimented the Descriptions very well. However, he thought that alphabetizing the occupations in the Bibliography would be better than assigning a numerical code because people were more familiar with that method and because the user would not need to refer to a separate listing of occupations to find the appropriate number. In evaluating the Cassette Recordings, he felt that some of the questions asked by the interviewer were often irrelevant. In addition, he felt there was a need for more tapes.

This student, a senior, indicated he used the System to find specific information about a particular occupation. After receiving a list of occupations and exploring many new areas which he had not considered, he said: "I was pretty well set on going into auto mechanics. After using OIAS, however, I found out that I was suited for many other things. I'm sure glad I made this discovery before I graduated."

Case #6: (Female, Senior)

After being introduced to the System through a class assignment, this student indicated that she used OIAS a number of times during the past two years. She felt that the System was unique because "it offers students a number of ways to learn about occupations." This individual felt that many people are turned off by the impersonality of computers and that being able to talk to people who are actually in an occupation is a strong asset. Conversely, she also said that others often want "fast, hard facts." To furnish this kind of information she felt that the terminal would be useful.

In assessing the Questionnaire and Descriptions she thought that they were clear, easy to read, and fun to use. She thought it would be helpful, however, to refer the student to more detailed information about the occupation in question at the bottom of each Description instead of having a separate Bibliography.

Case #6: (continued)

This student indicated that she was very pleased with what OIAS had to offer. She said that after she used it she referred it to several of her friends and talked it over extensively with her parents.

University of Oregon
Occupational Information Access Project
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